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**BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES**

Application Number: 10/733,861
Filing Date: December 11, 2003
Appellant(s): HAYEM ET AL.

Frankie W. Wong
For Appellant

EXAMINER'S ANSWER

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This is in response to the appeal brief filed March 02, 2009 appealing from the Office action mailed January 28, 2009.

(1) Real Party in Interest

A statement identifying by name the real party in interest is contained in the brief.

(2) Related Appeals and Interferences

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

(3) Status of Claims

The statement of the status of claims contained in the brief is correct.

(4) Status of Amendments After Final

No amendment after Final has been filed.

(5) Summary of Claimed Subject Matter

The summary of claimed subject matter contained in the brief is correct.

(6) Grounds of Rejection to be Reviewed on Appeal

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct.

(7) Claims Appendix

The copy of the appealed claims contained in the Appendix to the brief is correct.

(8) Evidence Relied Upon

Neumann U.S. Pub. No. 2002/0141441 A1

March 8, 2002

Kransmo U.S. Pat. No. 6,594,242 B1

January 14, 1999

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Perlman	U.S. Pub. No. 2002/0114360 A1	February 20, 2001
Schmidt	U.S. Pub. No. 2003/0067894 A1	October 9, 2001

(9) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-2, 4-7, 12-14 and 16-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Neumann et al (U.S. Pub. No. 2002/0141441 A1), in view of Kransmo (US 6,594,242 B1).

Referring to claim 1, Neumann discloses a multi-mode wireless communication device (abstract, and paragraph 0004, “dual mode”), comprising

a first baseband co-processor (paragraphs 6, 19-22, “TDMA co-processor”, “slave baseband co-processor”) configured to execute low-level stack operations of a first wireless communications protocol employed within a first wireless communications network (figures 2-4, 6B, 8B, and paragraphs 6, 19-21, 25 and 29 “TDMA co-processor”, “TDMA IS-136 network”, “slave baseband co-processor”, “slave baseband co-processor . . . to provide baseband functions according to a second telecommunications standard”, “TDMA BB processor”, “TDMA co-

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processor provides TDMA CODEC", note the connection of TDMA BB processor to the TDMA RF where TDMA is the first network, thus, the TDMA processor executes low-level (antenna/RF/physical level) stack operations);

a host baseband processor (Fig. 3 and paragraphs 20-22, "GSM master processor") configured to execute a set of protocol stack operations of a second wireless communications protocol (Figs. 5A-6B, paragraphs 20-22, 29, particularly paragraph 29, lines 2-3, "GSM network", "the GSM master processor 202 controls all GSM system related functions") employed within a second wireless communications network (figures 1-4, paragraphs 20-22, "GSM network")

and higher-level stack operations of said first wireless communications protocol (figures 2-3 and paragraphs 21-22, 29, "GSM master processor controls audio input/output ... in both first and second modes", note that audio is an application layer thus a higher-level stack operation and the GSM processor controls it both for GSM and TDMA network);

and a data communication channel (Figure 2-3, and paragraph 27, "glue logic") between said host baseband processor (Fig. 2-3, "GSM BB processor") and said first baseband co-processor (Fig. 2, "TDMA BB processor") capable of carrying data received by said multi-mode wireless communication device from said first wireless communications network or sent by said multi-mode wireless communication device through said first wireless communications network (figures 1-4, paragraphs 22-26);

Neumann further teaches one or both of said first baseband co-processor and said host baseband processor (the GSM processor) enabling *selecting* between bearers utilizing low-

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level stack operations and set of protocol stack operations (paragraph 37, “GSM master processor ... selects the mode of operation, e.g., whether GSM mode or TDMA”).

Neumann is silent about switching between bearers and maintaining bearer connections during switching as claimed.

However, the concepts of switching between different networks and hence different protocols and maintaining the connection are conventional in the art. Specifically, during a handoff process from a first network using a first protocol to a second network using a second protocol a switch between the networks has to take place. Consequently, the switch between different networks requires switching between different protocols.

Kransmo teaches a handover and roaming of a dual mode wireless terminal from a 3G network to a 2G network (abstract, col. 1, lines 50-67, and col. 2, lines 18-21, “handover and roaming of a wireless terminal from a third generation . . . to a second generation (2G) communication system”, “operating protocols”, note that a dual-mode mobile terminal capable of operating and roaming in two different systems is provided, where the handover process from a 3G system to a 2G inherently allows the dual mode wireless terminal to switch networks and maintain connection with at least one of the 2G and/or 3G networks and thus maintaining connection bearer a connection)

It would have been obvious to one of the ordinary skill in the art at the time of invention to modify the system of Neumann by incorporating the teachings of Kransmo and consequently modifying one or both of processors of Neumann (e.g., the GSM processor) to enable switching between bearers (since during handover a network switch/exchange takes

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place and thus a protocol switch takes place) utilizing low-level stack operations and set of protocol stack operations and maintain bearer connections (since in a handover process the wireless terminal maintains connection with at least one of the networks and thus a connection at least with one protocol/bearer of the two networks is maintained), for the purpose allowing the multi-mode wireless device to roam between different networks and thus user convenience.

Referring to claim 2, the combination of Neumann/Kransmo disclose the device of claim 1, and further disclose the set of protocol stack operations comprises a complete set of protocol stack operations of said second wireless communications protocol (paragraph 29).

Referring to claim 4, the combination of Neumann/Kransmo disclose the device of claim 3, and further disclose the set of protocol stack operations comprises higher-level protocol stack operations of said second wireless communications protocol (Neumann, figures 2-8B, paragraph 29).

Referring to claim 5, the combination of Neumann/Kransmo discloses the device of claim 1, and further discloses the low-level stack operations include physical layer functions (see the rejection of claim 1 above and figures 2-4, 6A, 6B and 8B, note the antenna in figure 2-3, 6A, 6B and 8B) and inherently bearer-specific stack functions peculiar to said first wireless communications protocol (Neumann, Figures 2-3 and 5A-6B and their corresponding paragraphs, "TDMA RF", "GSM RF").

Referring to claim 6, the combination of Neumann/Kransmo disclose the device of claim 5, and further disclose higher-level stack functions comprise stack functions common

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to said first and second wireless communication protocols (Neumann, paragraph 21, note that audio is common for both protocols).

Referring to claim 7, the combination of Neumann/Kransmo discloses the device of claim 1, and further discloses host baseband processor is further configured to execute application-layer functions (Neumann, paragraphs 21).

Referring to claim 12, the combination of Neumann/Kransmo disclose the device of claim 1, and further disclose first wireless communications protocol comprises WCDMA and said second wireless communications protocol comprises GSM (Kransmo, col. 2, line 59 through col. 3, line 15).

Referring to claims 13-14 and 16-18, claims 13-14 and 16-18 recite features analogous to the features of claims 1-2 and 4-6 (as rejected above). Thus, the combination of Neumann/Kransmo discloses all elements of claims 13-14 and 16-18 (please see the rejection of claim 1-2 and 4-6 above).

3. Claims 27-28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Neumann et al (U.S. Pub. No. 2002/0141441 A1) in view of Perlman (US 2002/0114360 A1).

Referring to claim 27, Neumann discloses a multi-mode wireless communication device (abstract, and paragraph 0004, “dual mode”), comprising

a first baseband co-processor (paragraphs 6, 19-22, “TDMA co-processor”, “slave baseband co-processor”) configured to execute low-level stack operations of a first wireless communications protocol employed within a first wireless communications network (figures

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2-4, 6B, 8B, and paragraphs 6, 19-21, 25 and 29 “TDMA co-processor”, “TDMA IS-136 network”, “slave baseband co-processor”, “slave baseband co-processor . . . to provide baseband functions according to a second telecommunications standard”, “TDMA BB processor”, “TDMA co-processor provides TDMA CODEC”, note the connection of TDMA BB processor to the TDMA RF where TDMA is the first network, thus, the TDMA processor executes low-level (antenna/RF/physical level) stack operations);

a host baseband processor (Fig. 3 and paragraphs 20-22, “GSM master processor”) configured to execute a set of protocol stack operations of a second wireless communications protocol (Figs. 5A-6B, paragraphs 20-22, 29, particularly paragraph 29, lines 2-3, “GSM network”, “the GSM master processor 202 controls all GSM system related functions”) employed within a second wireless communications network (figures 1-4, paragraphs 20-22, “GSM network”), and higher-level stack operations of said first wireless communications protocol (figures 2-3 and paragraphs 21-22, 29, “GSM master processor controls audio input/output . . . in both first and second modes”, note that audio is an application layer thus a higher-level stack operation and the GSM processor controls it both for GSM and TDMA network); and a data communication channel (Figure 2-3, and paragraph 27, “glue logic”) between said host baseband processor (Fig. 2-3, “GSM BB processor”) and said first baseband co-processor (Fig. 2, “TDMA BB processor”) capable of carrying data received by said multi-mode wireless communication device from said first wireless communications network or sent by said multi-mode wireless communication device through said first wireless communications network (figures 1-4, paragraphs 22-26);

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wherein said host baseband processor comprises a common stack functions module communicating to one or more application modules, said common stack functions module executing functions common to said first and second wireless communications protocols (Figures 2-3, 5A-8B and paragraph 20-21 and 29, “*The master processor also controls a variety of shared functions, including, for example, RF front end, display, keypad*”, “In addition, the GSM master processor 202 controls the RF front end 216, the power supply 206, and the input/output functions”, “GSM master processor controls audio input/output”, note that the GSM master processor controls GSM system functions and also functions that are common to both GSM processor and TDMA processor, e.g., input/output, audio, keypad and power supply. For example, audio is common for both GSM and TDMA protocols and the audio function for both networks is controlled by the GSM processor. Thus, the GSM processor has a common module (common stack functions module) to provide audio function for both GSM and TDMA protocols regardless of which network the device is in communications with); and

a first bearer-specific module for implementing bearer-specific stack functions related to said first wireless communications protocol (paragraphs 20, 25 and 29, “Functions dedicated to the GSM master processor include GSM system function and control of GSM radio frequency”, “The GSM master processor 202 controls all GSM system related functions and the GSM RF unit 214”, note the GSM master processor controls GSM system function. GSM system functions are the bearer-specific stack function. They are specific to GSM system functions);

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wherein said first baseband co-processor comprises a first physical layer module for implementing physical function (Figures 2-4, 6A, 6B and 8B and the corresponding paragraphs, particularly paragraphs 20-21, 29, 45, 50, “the TDMA co-processor 204 controls TDMA system related functions and the TDMA RF unit 218”, “slave co-processor controls ... TDMA RF functions”, note that RF is within the physical layer and the TDMA co-processor controls it, thus the TDMA co-processor must have a module to do so, and that module can be called the a first physical layer module).

Neumann further discloses memory units (buffers) within each one of the processors (Figures 2-3, 6A, 6B, 8A and 8B and the corresponding paragraphs, particularly figure 2, “shared memory”).

Neumann does not specifically disclose that these buffers are located such that in the first baseband co-processor, a first buffer is in communication with the first physical layer module and the first bearer-specific module, and the in the host baseband processor, a second buffer is in communication with the first bearer-specific module and the common stack functions module.

However, the concept of providing buffers between modules is conventional in the art. Particularly, in network engineering buffers are provided between network nodes to prevent traffic congestion and equalize the data flow among network nodes.

Perlman discloses that buffers are provided to interconnect system module to improve system performance (Fig. 3, 5 and Par. 71, “buffers may be provided in this manner between any of the system modules”).

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Therefore, it would have been obvious to one of the ordinary skill in the art at the time of invention to modify the device of Neumann in the format claimed, for the purpose of equalizing the data flow between modules and preventing network traffic congestion, and thus providing an efficient communication device.

Referring to claim 28, the combination of Neumann/Perlman discloses the device according to claim 27, and further discloses the host baseband processor comprises a common stack functions module and one or more application modules, said common stack functions module executing functions common to said first and second wireless communications protocols (Figures 2-3, 5A-8B and paragraph 21).

4. Claims 29-30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Neumann et al (U.S. Pub. No. 2002/0141441 A1) in view of Kransmo (US 6,594,242 B1), and further in view of Perlman (US 2002/0114360 A1).

Referring to claim 29, Neumann discloses a multi-mode wireless communication device (abstract, and paragraph 0004, "dual mode"),

comprising a first baseband co-processor (paragraphs 6, 19-22, "TDMA co-processor", "slave baseband co-processor") configured to execute low-level stack operations of a first wireless communications protocol employed within a first wireless communications network (figures 2-4, 6B, 8B, and paragraphs 6, 19-21, 25 and 29 "TDMA co-processor", "TDMA IS-136 network", "slave baseband co-processor", "slave baseband co-processor . . . to provide baseband functions according to a second telecommunications standard", "TDMA BB processor", "TDMA co-processor provides TDMA CODEC", "TDMA co-processor 204

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controls TDMA system related functions and the TDMA RF unit 218”, note the connection of TDMA BB processor to the TDMA RF where TDMA is the first network, thus, the TDMA processor executes low-level (antenna/RF/physical level) stack operations); a host baseband processor (Fig. 3 and paragraphs 20-22, “GSM master processor”) configured to execute a set of protocol stack operations of a second wireless communications protocol (Figs. 5A-6B, paragraphs 20-22, 29, particularly paragraph 29, lines 2-3, “GSM network”, “the GSM master processor 202 controls all GSM system related functions”) employed within a second wireless communications network (figures 1-4, paragraphs 20-22, “GSM network”);

and higher-level stack operations of said first wireless communications protocol (figures 2-3 and paragraphs 21-22, 29, “GSM master processor controls audio input/output ... in both first and second modes”, note that audio is an application layer thus a higher-level stack operation and the GSM processor controls it both for GSM and TDMA network);

and a data communication channel (Figure 2-3, and paragraph 27, “glue logic”) between said host baseband processor (Fig. 2-3, “GSM BB processor”) and said first baseband co-processor (Fig. 2, “TDMA BB processor”) capable of carrying data received by said multi-mode wireless communication device from said first wireless communications network or sent by said multi-mode wireless communication device through said first wireless communications network (figures 1-4, paragraphs 22-26);

wherein said host baseband processor comprises a first bearer-specific module for implementing bearer-specific stack functions related to said first wireless communications protocol (paragraphs 20, 25 and 29, “Functions dedicated to the GSM master processor

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include GSM system function and control of GSM radio frequency”, “The GSM master processor 202 controls all GSM system related functions and the GSM RF unit 214”, note the GSM master processor controls GSM system function. GSM system functions are the bearer-specific stack function. They are specific to GSM system functions);

wherein said first baseband co-processor comprises a first physical layer module for implementing physical function (Figures 2-4, 6A, 6B and 8B and the corresponding paragraphs, particularly paragraphs 20-21, 29, 45, 50, “co-processor 204 controls ... TDMA RF unit 218”).

Neumann further discloses memory units (buffers) within each one of the processors (Figures 2-3, 6A, 6B, 8A and 8B and the corresponding paragraphs, particularly figure 2, “shared memory”).

Neumann does not specifically disclose that these buffers are located such that in the first baseband co-processor, a first buffer is in communication with the first physical layer module and the first bearer-specific module.

However, the concept of providing buffers between modules is conventional in the art. Particularly, in network engineering buffers are provided between network nodes to prevent traffic congestion and equalize the data flow among network nodes.

Perlman discloses that buffers are provided to interconnect system module to improve system performance (Fig. 3, 5 and Par. 71, “buffers may be provided in this manner between any of the system modules”).

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Therefore, it would have been obvious to one of the ordinary skill in the art at the time of invention to modify the device of Neumann in the format claimed, for the purpose of equalizing the data flow between modules and preventing network traffic congestion, and thus providing an efficient communication device.

Neumann further teaches one or both of said first baseband co-processor and said host baseband processor (the GSM processor) enabling *selecting* between bearers utilizing low-level stack operations and set of protocol stack operations (paragraph 37, “GSM master processor ... selects the mode of operation, e.g., whether GSM mode or TDMA”).

The combination of Neumann/Perlman does not specifically disclose switching between bearers and maintaining bearer connections during switching as claimed.

However, the concepts of switching between different networks and hence different protocols and maintaining the connection are conventional in the art. Specifically, during a handoff process from a first network using a first protocol to a second network using a second protocol a switch between the networks has to take place. Consequently, the switch between different networks requires switching between different protocols.

Kransmo teaches a handover and roaming of a dual mode wireless terminal from a 3G network to a 2G network (abstract, col. 1, lines 50-67, and col. 2, lines 18-21, “handover and roaming of a wireless terminal from a third generation . . . to a second generation (2G) communication system”, “operating protocols”, note that a dual-mode mobile terminal capable of operating and roaming in two different systems is provided, where the handover

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process from a 3G system to a 2G allows the dual mode wireless terminal to switch networks and maintain connection with the 2G and/or 3G networks and thus maintaining connection bearer a connection).

It would have been obvious to one of the ordinary skill in the art at the time of invention to modify the system of Neumann/Perlman by incorporating the teachings of Kransmo and consequently modifying one or both of processors of Neumann (e.g., the GSM processor) to enable switching between bearers (since during handover a network switch/exchange takes place and thus a protocol switch takes place) utilizing low-level stack operations and set of protocol stack operations and maintain bearer connections (since in a handover process the wireless terminal maintains connection with at least one of the networks and thus a connection at least with one protocol/bearer of the two networks is maintained), for the purpose allowing the multi-mode wireless device to roam between different networks and thus user convenience.

Referring to claim 30, Neumann discloses a multi-mode wireless communication device (abstract, and paragraph 0004, “dual mode”),

comprising a first baseband co-processor (paragraphs 6, 19-22, “TDMA co-processor”, “slave baseband co-processor”) configured to execute low-level stack operations of a first wireless communications protocol employed within a first wireless communications network (figures 2-4, 6B, 8B, and paragraphs 6, 19-21, 25 and 29 “TDMA co-processor”, “TDMA IS-136 network”, “slave baseband co-processor”, “slave baseband co-processor . . . to provide baseband functions according to a second telecommunications standard”, “TDMA BB

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processor”, “TDMA co-processor provides TDMA CODEC”, note the connection of TDMA BB processor to the TDMA RF where TDMA is the first network, thus, the TDMA processor executes low-level (antenna/RF/physical level) stack operations);

a host baseband processor (Fig. 3 and paragraphs 20-22, “GSM master processor”)

configured to execute a set of protocol stack operations of a second wireless communications protocol (Figs. 5A-6B, paragraphs 20-22, 29, particularly paragraph 29, lines 2-3, “GSM

network”, “the GSM master processor 202 controls all GSM system related functions”)

employed within a second wireless communications network (figures 1-4, paragraphs 20-22, “GSM network”)

and higher-level stack operations of said first wireless communications protocol (figures 2-3 and paragraphs 21-22, 29, “GSM master processor controls audio input/output ... in both first and second modes”, note that audio is an application layer thus a higher-level stack operation and the GSM processor controls it both for GSM and TDMA network);

and a data communication channel (Figure 2-3, and paragraph 27, “glue logic”) between said host baseband processor (Fig. 2-3, “GSM BB processor”) and said first baseband co-processor (Fig. 2, “TDMA BB processor”) capable of carrying data received by said multi-mode wireless communication device from said first wireless communications network or sent by said multi-mode wireless communication device through said first wireless communications network (figures 1-4, paragraphs 22-26);

wherein said host baseband processor comprises a first bearer-specific module for implementing bearer-specific stack functions related to said first wireless communications protocol (paragraphs 20, 25 and 29, “Functions dedicated to the GSM master processor

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include GSM system function and control of GSM radio frequency”, “The GSM master processor 202 controls all GSM system related functions and the GSM RF unit 214”, note the GSM master processor controls GSM system function. GSM system functions are the bearer-specific stack function. They are specific to GSM system functions); and

wherein said first baseband co-processor comprises a first physical layer module for implementing physical function (Figures 2-4, 6A, 6B and 8B and the corresponding paragraphs, particularly paragraphs 20-21, 29, 45, 50, “TDMA co-processor 204 controls ... TDMA RF unit 218”).

Neumann further discloses memory units (buffers) within each one of the processors (Figures 2-3, 6A, 6B, 8A and 8B and the corresponding paragraphs, particularly figure 2, “shared memory”).

Neumann does not specifically disclose that these buffers are located such that in the first baseband co-processor, a first buffer is in communication with the first physical layer module and the first bearer-specific module, and the in the host baseband processor, a second buffer is in communication with the first bearer-specific module and the common stack functions module.

However, the concept of providing buffers between modules is conventional in the art.

Particularly, in network engineering buffers are provided between network nodes to prevent traffic congestion and equalize the data flow among network nodes.

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Perlman discloses that buffers are provided to interconnect system module to improve system performance (Fig. 3, 5 and Par. 71, “buffers may be provided in this manner between any of the system modules”).

Therefore, it would have been obvious to one of the ordinary skill in the art at the time of invention to modify the device of Neumann in the format claimed, for the purpose of equalizing the data flow between modules and preventing network traffic congestion, and thus providing an efficient communication device.

The combination of Neumann/Perlman further teaches one or both of said first baseband co-processor and said host baseband processor (the GSM processor) enabling *selecting* between bearers utilizing low-level stack operations and set of protocol stack operations (Neumann, paragraph 37, “GSM master processor ... selects the mode of operation, e.g., whether GSM mode or TDMA”).

The combination does not specifically disclose switching between bearers and maintaining bearer connections during switching as claimed.

However, the concepts of switching between different networks and hence different protocols and maintaining the connection are conventional in the art. Specifically, during a handoff process from a first network using a first protocol to a second network using a second protocol a switch between the networks has to take place. Consequently, the switch between different networks requires switching between different protocols.

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Kransmo teaches a handover and roaming of a dual mode wireless terminal from a 3G network to a 2G network (abstract, col. 1, lines 50-67, and col. 2, lines 18-21, “handover and roaming of a wireless terminal from a third generation . . . to a second generation (2G) communication system”, “operating protocols”, note that a dual-mode mobile terminal capable of operating and roaming in two different systems is provided, where the handover process from a 3G system to a 2G allows the dual mode wireless terminal to switch networks and maintain connection with at least one of the 2G and/or 3G networks and thus maintaining connection bearer a connection).

It would have been obvious to one of the ordinary skill in the art at the time of invention to modify the combination by incorporating the teachings of Kransmo and consequently modifying one or both of processors of Neumann (e.g., the GSM processor) to enable switching between bearers (since during handover a network switch/exchange takes place and thus a protocol switch takes place) utilizing low-level stack operations and set of protocol stack operations and maintain bearer connections (since in a handover process the wireless terminal maintains connection with at least one of the networks and thus a connection at least with one protocol/bearer of the two networks is maintained), for the purpose allowing the multi-mode wireless device to roam between different networks and thus user convenience.

5. Claims 3 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Neumann et al (U.S. Pub. No. 2002/0141441 A1), in view of Kransmo (US 6,594,242 B1), and further in view of Schmidt (US Pub. No. 2003/0067894 A1).

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Referring to claim 3, the combination of Neumann/Kransmo discloses the device of claim 1.

The combination does not disclose a second baseband processor in the format claimed.

Schmidt discloses second baseband processor in communication with a host baseband processor via a data communication channel (Figures 1A-2, abstract, paragraphs 0004, 0010-0011, 23-25, 27-29, 31, 35, 40, 44-46, 49, and 51).

It would have been obvious to one of the ordinary skill in the art at the time of the invention to modify the combination by incorporating the teachings of Schmidt, for the purpose of dividing operations among three processors and thus a more efficient wireless terminal.

Referring to claim 15, claim 15 recites features analogous to the features of claim 3 (as rejected above). Thus, the combination of Neumann/Kransmo discloses all elements of claims 15 (please see the rejection of claim 1-2 and 4-6 above).

(10) Response to Arguments

I. Rejection under 35 USC 112, First Paragraph:

Applicant's arguments overcome the rejection of claim 30 under 35 USC 112, first paragraph. Therefore, the rejection of claim 30 under 35 USC 112 is withdrawn.

II. Rejection of Independent Claims 1-2, 4-7, 12-14, and 16-18 under 35 USC

103(a).

Arguments to the Rejection of Independent Claims 1 and 13

Regarding claim 1, the Appellant submits that the combination of Neumann and Kransmo at least does not disclose "enabling switching between bearers utilizing said low-level stack operations and said set of protocol stack operations and maintaining bearer connections during said switching," as recited in claim 1 by the Appellant. The Appellant further points out that the Examiner fails to provide support as required by MPEP§2142 to show that Kransmo suggests or discloses the use of any communication protocols, both in the 3G and/or 2G networks, and in the mobile station MS 12 itself (i.e., the alleged dual-mode wireless terminal), as asserted by the Examiner.

The examiner respectfully disagrees. First with respect to "enabling switching between bearers utilizing said low-level stack operations and said set of protocol stack operations and maintaining bearer connections during said switching," the examiner, as explained in the Final Office Action and Advisory, asserts that the element "enabling switching between bearers" is simply interpreted as enabling switching between different networks that have different protocols, for example, switching from a 3G communication system network to a 2G communication system network, as disclosed in Kransmo. A person of ordinary skill in the art would know that switching between two different networks with different protocols would employ switching between different protocols that the networks belong to. Second, as indicated clearly in the Advisory and Final Office action, Neumann discloses the use of two different communication protocols. Neumann discloses a multi-mode wireless device that operates according to TDMA IS-

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136 network (see Par. 6 and 22, “a first telecommunications standard”), thus, it must operate according to the TDMA IS-136 communication protocol. Further, Neumann discloses that the multi-mode device operates according to a GSM network standard (Par. 21-22), thus, it must operate according to GSM network protocol. Although, the disclosures of Neumann is sufficient to read on the claimed limitations of first and second communication protocols, Kransmo also discloses a multi-mode device that operates in different protocols. Kransmo discloses a wireless device that operates in 2G and 3G networks, thus, Kransmo’s multi-mode device must operate in two different communication protocols (e.g., 2G and 3G) because 2G protocols are different than 3G protocols. Thus, when the mobile device of Kransmo is switched from a 3G to a 2G network the 3G protocol is also switched to a 2G protocol.

On lines 11-18, the Appellant argues that Kransmo does not disclose the mobile station 12 itself performs any protocol stack operation. The examiner respectfully disagrees with the appellant and asserts that first of all the claim language does not specifically claim the limitation, “itself.” Further, the applicant is ignoring the disclosures of Neumann. Neumann discloses a multi-mode device that has two processors, a TDMA processor and a GSM processor. The GSM processor performs a set of protocol stack operations of the GSM network (see par. 29). Since, the GSM processor is integrated within the multi-mode device, thus the multi-mode device itself is doing the protocol stack operations of the GSM network. When one of the processors of Neumann performs protocol stack operations, a person of ordinary skill in the art would conclude that the device itself is performing the protocol stack operation.

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The Appellant further argues that Kransmo does not disclose that the mobile station MS 12 performs switching from a 3G communication protocol to a 2G communication protocol during the handover. The examiner respectfully disagrees. The examiner respectfully asserts that 3G protocol is different from 2G protocol. Since the device of Kransmo switches from a 3G network to a 2G network the protocol must also be switched from 3G to 2G, otherwise the switching (handover) will not work (see Kransmo col. 1, lines 50-67 and col. 2, lines 1-67).

The Appellants arguments on page 19 line 19 to page 21 line 15 have been considered but they are not persuasive. In response to arguments that “in the 11/24/2008 response to Final Office Action, the Appellant at pages 15-16 pointed out the inconsistencies of the Examiner's arguments, namely, Kransmo does not disclose or suggest that there is any communication protocol switching within the mobile station MS 12 device itself, when switching from a 3G communication network to a 2G communication network.,” examiner asserts that Kransmo clearly discloses switching from a 3G to 2G network. A person of ordinary skill in the art would understand that 3G protocol is different from 2G protocol. Thus, since the device of Kransmo switches from a 3G network to a 2G network the protocol must also be switched from 3G to 2G, otherwise the switching (handover) will not work (see Kransmo col. 1, lines 50-67 and col. 2, lines 1-67). In response to arguments that “Instead, Kransmo discloses that the switching is based on providing control channel information for the 2G communication system over a downlink control channel of the 3G communication system to the wireless terminal. More specifically, Kransmo discloses that the mobile station MS 12 utilizes

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the control channel information, such as the S-burst 58 (Synchronization Channel SCH) of a GSM 2G frame 50, to synchronize with the blank slot 60 of a WCDMA 3G frame 54 (see Fig. 2 and Kransmo at col. 4, lines 46-56). In other words, Kransmo discloses that during switching from a 3G network to a 2G network, the GSM 2G network frame control channel information is provided to the mobile station MS 12 (which operates in WCDMA 3G network frame), resulting in a reduction in channel frequency search time or a reduction in handover time (see Kransmo Fig. 3, and at col. 2, lines 18-31),” the examiner asserts that Kransmo still switches from a 3G to a 2G network regardless of how it performs the switching and switching of networks from 3G to 2G implies that the protocols are switched as well based on the reasons above.

In response to arguments on page 20, line 13 to page 21, line 15, the examiner asserts that Kransmo still switches from a 3G to a 2G network regardless of how it performs the switching and switching of networks from 3G to 2G implies that the protocols are switched as well based on the reasons above.

III. Rejection of Claims 27-28 under 35 USC § 1039a)

With regard to arguments that “the combination of Neumann and Perlman does not disclose “a first bearer-specific module for implementing bearer-specific stack functions related to said first wireless communications protocol,” the examiner respectfully disagrees. The examiner refers the applicant to the Neumann’s paragraph 21 that recites “The GSM master processor controls audio input/output and an RF front end circuit in both the first and second

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modes." Note that the first and second modes correspond to TDMA and GSM modes. Further, Neumann discloses in paragraph 29, lines 7-8 that "The GSM master processor 202 also controls the TDMA co-processor 204." Thus, a person of ordinary skill in the art would be able to make the GSM processor to control specific functions of TDMA co-processor since the GSM processor is already controlling the TDMA co-processor.

In response to arguments that the combination of Neumann and Perlman does not disclose "a second buffer in communication with said first bearer-specific module and said common stack functions module ... a first buffer in communication with said first physical layer module and said first bearer-specific module," the examiner respectfully disagrees and asserts that Perlman discloses that buffers are provided to interconnect system module to improve system performance (Fig. 3, 5 and Par. 71, "buffers may be provided in this manner between any of the system modules"). Thus, a person of ordinary skill in the art would understand that the combination of Neumann/Kransmo would be modified by using buffers, as suggested by Perlman, so that buffers can be used for further processing and also as a Queue for efficient processing.

In response to arguments that Perlman is not relevant art, the examiner asserts that it has been held that a prior art reference must either be in the field of applicant's endeavor or, if not, then be reasonably pertinent to the particular problem with which the applicant was concerned, in order to be relied upon as a basis for rejection of the claimed invention. See *In re Oetiker*, 977 F.2d 1443, 24 USPQ2d 1443 (Fed. Cir. 1992). In this case, Perlman is clearly in the field of wireless communication. Further, the concept of

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inserting buffers between modules is a fundamental engineering concept that a person of ordinary skill in the art would understand. Further, Neumann discloses all limitations of the claimed invention except for buffering between modules. In fact a user would not know the difference between the device of Neumann and the device of the applicant. Therefore, a person of ordinary skill in the art would be able to modify Neumann by applying the fundamental concept of buffering between modules as disclosed by Perlman.

IV. Rejection of Claims 29-30 under 35 USC § 103(a)

Appellant argues that "Regarding independent claims 29-30, the Examiner uses the same rationale as claims 27-28 to reject claims 29-30. The Appellant refers the Examiner to the above arguments in section III. Namely, the Examiner uses ambiguous and conflicting information to reject claims 27-28. Consequently, Neumann does not disclose "said host baseband processor comprises: a first bearer-specific module for implementing bearer-specific stack functions related to said first wireless communications protocol," and "said baseband co-processor comprises ... a first buffer in communication with said first physical layer module and said first bearer-specific module," as recited in claims 29 and 30 by the Appellant. In addition, Kransmo and Perlman do not overcome the above deficiencies of Neumann. Moreover, the Examiner is referred to the same argument to independent claim 1 above, that the combination of Neumann and Kransmo does not disclose or suggest **"enabling switching between bearers utilizing said low-level stack operations and said set of protocol stack operations and maintaining bearer connections during said switching,"** as recited in claims 29 and 30 by the Appellant. Perlman does not

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overcome the above deficiencies of Neumann and Kransmo. Therefore, the Appellant submits that independent claims 29 and 30 should be allowable. Accordingly, the Appellant believes the rejection of independent claims 29 and 30 under 35 U.S.C. § 103(a) as being unpatentable over Neumann in view of Kransmo and Perlman has been overcome and requests that the rejection be withdrawn."

The examiner respectfully disagrees. The examiner asserts that claims 29-30 are rejected in view of Neumann, Kransmo and Perlman while claims 27-28 are rejected in view of Neumann and Perlman. The only additional limitation that claims 29-30 presents is **"enabling switching between bearers utilizing said low-level stack operations and said set of protocol stack operations and maintaining bearer connections during said switching,"**

The examiner asserts that the remaining limitations of claims 29-30 are analogous to limitations of claims 27-29. Therefore, the same arguments that were made with respect to claims 27-28 also apply to claims 29-30.

With regards to the limitation, **"enabling switching between bearers utilizing said low-level stack operations and said set of protocol stack operations and maintaining bearer connections during said switching,"** which is additional in claims 29-30, the examiner asserts that the combination of Neumann/Kransmo discloses this limitation for the following reasons:

With respect to "enabling switching between bearers utilizing said low-level stack operations and said set of protocol stack operations and maintaining

bearer connections during said switching," the examiner, as explained in the Final Office Action and Advisory, asserts that the element "enabling switching between bearers" is simply interpreted as enabling switching between different networks that have different protocols, for example, switching from a 3G communication system network to a 2G communication system network, as disclosed in Kransmo. A person of ordinary skill in the art would know that switching between two different networks with different protocols would employ switching between different protocols that the networks belong to. Further, as indicated clearly in the Advisory and Final Office action, Neumann discloses the use of two different communication protocols. Neumann discloses a multi-mode wireless device that operates according to TDMA IS-136 network (see Par. 6 and 22, "a first telecommunications standard"), thus, it must operate according to the TDMA IS-136 communication protocol. Further, Neumann discloses that the multi-mode device operates according to a GSM network standard (Par. 21-22), thus, it must operate according to GSM network protocol. Although, the disclosures of Neumann is sufficient to read on the claimed limitations of first and second communication protocols, Kransmo also discloses a multi-mode device that operates in different protocols. Kransmo discloses a wireless device that operates in 2G and 3G networks, thus, Kransmo's multi-mode device must operate in two different communication protocols (e.g., 2G and 3G) because 2G protocols are different than 3G protocols. Thus, when the mobile device of Kransmo is switched from a 3G to a 2G network the 3G protocol is also switched to a 2G protocol.

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Related Proceeding(s) Appendix

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interference section of this examiner's answers.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

Fred A. Casca

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